pale straw color. New Haven, arch of pale white light 10° alt., 30° azimuth. Newburyport, Mass., bright segment, 15° azimuth, with quivering motion, rays shooting upward to 20° alt. Waterburg, N. Y., 10° alt. North Volney and Argyle, N. Y., diffuse light. Oswego, diffuse yellow light. Buffalo, faint motionless light above a dark segment of 20° alt., 6° breadth and from 160° to 200° azimuth; beams brighter near midnight. Marquette, Mich., faint. Pembina, Dak., broad band of brilliant white light from 170° to 270° az., altitude, 30°. Sometimes a second arch formed 10° under the first; at such times the upper arch faded while the second rose with increasing brilliance, occasionally sending rays of short duration upward across the first arch. Bismarck, segment of nebulous light, 15° alt., with few streamers. 28th.—The display generally prevailed from 8 p. m., Washington mean time till after midnight. Eastport, Me., arch from NW. to NE.; alt. 35°. Gardiner, Me., faint, without beams, 60° az. Cambridge, Mass., suspected. Grafton, N.H., very bright. Burlington, Vt., pale emerald green light of marked intensity; a dark segment and bright arch with frequent streamers changing near midnight to steady light. New Haven, well defined dark segment almost black, with no arch or crown; color delicate rose; streamers of steady light with variable brightness and altitude occasionally shooting up to 30°. Ardenia, Waterburg and Argyle, N. Y., faint and diffuse. Pembina, from 170° to 260° az., pale diffuse light with no distinct outlines; light being brightest at its summit, 40°. Light brilliant enough to cast a faint shadow. Bismarck, Dak., faint; altitude 10°; one stationary beam in NNE. section. On the 2nd a display was visible at Eastport, Me., pale yellow. Grafton, N. H., and Burlington, Vt., bright arch with few streamers, but no dark segment. 4th, at Pembina, Dak., faint. The following reports, *March*, were received too late for publication in that *Review:* Eola, Oregon, 6th, very faint. Ft. Assinaboine, Montana, 12th, 9.15 p. m., extending from E. to W. Three parallel arches, two upper very distinct, lowest faint. Twelve luminous beams shot upward from the highest arch. One beam resembled a bluish flame, and continued with great splendor for 45 minutes. 17th, 10 p. m., lasting 40 minutes, aurora arch of irregular and sinuous bands of variable curves, with rapid undulating motion from E. to W. Bright beams shot upward from arch, lasting but few moments. Thornville, Mich., 17th, 9 to 10 p. m., few beams, no dark segment. In connection with the extensive display (from Maine to Montana) of March 27th it is noted as of interest that at 9 p. m. an aurora was seen at Edinburgh, Scotland. It was a low arch of quiescent light, breaking up at 11 p. m. into bright pellets, which sent upwards fainter rays, and then gradually disappeared.

Atmospheric Electricity.—Pembina, Dak., 3rd, during a snow storm a constant band of flame, accompanied by a loud buzzing sound, continued for nearly an hour between the points of the lightning arrester. Omaha, 13th, telegraph wire highly charged with electricity for whole day during a violent dust-storm. Mt. Washington, N. H., 10th, strong shocks of electricity felt from anemometer through two pair mittens, one of buckskin.

MISCELLANEOUS PHENOMENA.

Sunsets.—The characteristics of the sky at sunset as indicative of fair or foul weather for the succeeding twenty-four hours have been observed at all Signal Service Stations. Reports from 133 stations show 8,901 observations to have been made, of which 30 were reported doubtful; of the remainder, 3,265 or 84.3 per cent. were followed by the expected weather.

Zodiacal Light.—Harvard College, Cambridge, Mass., looked for daily; distinct, 5th, 8th; visible, 7th, 10th; suspected, 26th. Wytheville, Va., 4th, 5th; very bright, broad cone, 8th. Mr. Chas. Hasselbrink, observer, at Havana, Cuba, reports: April 1st, 8 p. m., visible about 20° above horizon, of irregular elliptical shape, with large axis, inclined to north; 8:15 p. m., diminished and, at 9 p. m., disappeared. 3rd, light glare, of triangular shape, from 8:30 to 9:20 p. m. 6th, light, fairly visible, about 7:25 p. m.—stands about 27° high—without determined shape, and inclined (2° to 3°) to north; after 8:15 p. m. indifferent glare till disappearance. The following are a number of conclusions arrived at by Mr. Hasselbrink. (1) The zodiacal light is visible at Havana whenever the circumstances are favorable. that is, when there is neither cloudiness nor moonshine; (2) it presents a translucent, reddish, yellowish veil, which partly or feebly masks the sky, and when it decreases in brightness various stars become visible; (3) the intermittence in its intensity is characteristic, can be noted always, and is generally surprisingly sudden—every increase of light seems a rapid effluvium; (4) the extension and form vary; sometimes it stands about 40° above horizon, and has somewhat the shape of an isosceles triangle, at other times it does not rise above 30°, widening at base and approaching equilateral triangle; (5) the light generally exceeds in brightness that of the milky way, and has a different character, being more uniform; (6) the duration is from 1½ to 2 hours; (7) direction of axis of light not yet determined—it appears at times inclined towards the north, at times has the same inclination towards the south, and sometimes appears perpendicular.

Meteors.—Woodstock, Md., 28th, 8:40 p. m., greenish color, large nucleus; exploded, but no noise heard. Cape Henry, Va., 1st, 10 p. m., lighting up entire heavens; course from SE. to N., visible 8 seconds; color pale blue, leaving train of bright yellow; exploded 35° above horizon; no noise heard.

Solar and Lunar Halos were reported in too large a number during April to permit of their enumeration in detail.

Prairie and Forest Fires.—In the vicinity of Lincoln, Sussex Co., Del., 13th, 5,000 acres burned over the first day. Pike and Monroe Cos, Pa., 14th, assumed alarming proportions; 25th, broke out afresh, causing great destruction of timber. In Monroe Co. nearly 2,000 acres burned over. Ocean Co., N. J., 14th, most extensive for years, area burnt over estimated at 60 square miles, extending from Bricksburg to Manchester; 18th, broke out again; Cape May and Cumberland Cos., 19th, disastrous fires broke out at Millville, Belle

Plain and Mt. Pleasant; fires still burning vigorously in Cape May, Cumberland and Atlantic Cos. Norfolk, Va., 15th, extensive fires in Dismal Swamp; enveloped Lake Drummond, preventing steamers from passing through the canal. Petersburg, Va., 15th, fires uncontrolable; in Prince George county very destructive. Dinwiddie, Chesterfield and Sussex Cos., 18th, reported beyond all control; losses very great; three persons burned to death. Port Jefferson, L. I., 21st, terrible forest fire swept away nearly the whole north portion of the town of Brookhaven, burning over 1,000 acres in the adjacent country.

Sun Spots.—The following record of observations, made by Mr. D. P. Todd, Assistant, has been forwarded by Prof. S. Newcomb, U. S. Navy, Superintendent, Nautical Almanac Office, Washington, D. C.:

Date—April, 1880.	No. of new—		Disappeared by solar rotation.		Reappeared by solar rotation.		Total number visible.		Remarks.
	Groups	Spots.	Groups	Spots.	Groups	Spots.	Groups	Spots.	
1st, 8 a. m....	0	0	0	0	0	0	3	10	Faculæ.
2nd, 8 a. m....	0	7	1	5	0	0	2	12	
4th, 2 p. m....	0	14†	0	0	0	0	2	26†	Faculæ. Many of the spots small.
5th, 8 a. m....	0	0	0	0	0	0	2	16†	
7th, 9 a. m....	0	0	.....	.....	0	0	1	3	Faculæ. Spots probably disappeared by solar rotation.
8th, 9 a. m....	0	0	0	0	0	0	1	3	
9th, 8 a. m....	1	2	0	0	0	0	2	5	Faculæ.
10th, 8 a. m....	1	5	0	0	0	0	3	10	Faculæ.
11th, 9 a. m	0	0	1	3	0	0	1	10	
12th, 7 a. m....	0	0	0	0	0	0	1	10	
13th, 8 a. m....	0	0	0	0	0	0	1	10	
14th, 8 a. m....	1	3	0	0	1	3	2	13	Faculæ.
15th, 8 a. m....	0	0	0	0	0	0	2	13	Faculæ.
17th, 7 a. m....	0	0	1	10	0	0	1	3	Spots small.
18th, 8 a. m....	0	0	0	0	0	0	1	3	Broad areas of faculæ.
20th, 5 p. m	1	1	0	0	0	0	2	4	Faculæ.
21st, 6 p. m....	0	2	0	0	0	0	2	6	
22nd, 4 p. m....	0	0	0	0	0	0	2	6	
23rd, 3 p. m....	0	0	0	0	0	0	0	0	
26th, 3 p. m....	1	8	0	0	0	0	1	8	
27th, 8 a. m....	0	10	0	0	0	0	1	18†	Faculæ.
28th, 7 a. m....	0	7	0	0	0	0	1	25†	Faculæ. Many of the spots small.
30th, 8 a. m....	0	0	0	0	0	0	1	25†	Many of the spots small.

†Approximated.

NOTES AND EXTRACTS.

Referring to the United States Signal Service Meteorological Charts, showing the mean pressure and temperature for July, 1878, *Nature*, of *April 15th*, says: "Thus then the meteorology of the globe for July, 1878, stands out as a singular phenomenon, characterized by these broad features, viz.:—(1) a greatly reduced pressure over a large portion of the Southern Hemisphere as compared with what usually obtains there in the winter month of July; (2) a much greater diminution of the pressure than usually takes place in the summer month of July over the land of the Northern Hemisphere, over North America, over Central and Eastern Europe, Western and Central Siberia; and (3) a much larger increase of pressure than usually occurs in the Northern Hemisphere over the great oceans in July, the area of unusually high pressure being extended, as regards the Atlantic to the northeast as far as Christiansund, and as regards the Pacific to westward over Central and Southern Asia, as far as the Arabian Sea. It may be worth remarking that this increased pressure over the oceans and diminished pressure over the land of the Northern Hemisphere is in accordance with what might be expected to result from an increased solar radiation; whilst on the other hand the increased pressure over Southern and Central Asia, and diminished pressure in the Southern Hemisphere, is not in direct accordance with this supposition. The point here referred to will however receive an illustration from subsequent numbers of the Weather Maps, by which it is probable that different results as regards the states of the atmosphere will appear, with the varying states of the sun from year to year. The future maps of this international series will be eagerly scanned in connection with many of the larger questions of atmospheric physics, as well as those directly practical questions of climate with which we have been almost exclusively concerned in this article. It is plain that we need not hope to succeed in dealing with most of the larger problems proposed by meteorology without the help of the data laid before us in so full and convenient a form by the International Weather Maps of General Myer. It is only thus that we can trace to their proximate causes such climatal phenomena as the recurring droughts of India and the cold, sunless summer of the British Isles in 1879, and show their true relations to the great movements of the atmosphere."

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Brig. Gen. (Bvt. Assgd.) Chief Signal Officer. U. S. A.

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